Electricity on the Farm

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JUNE

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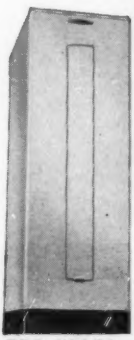

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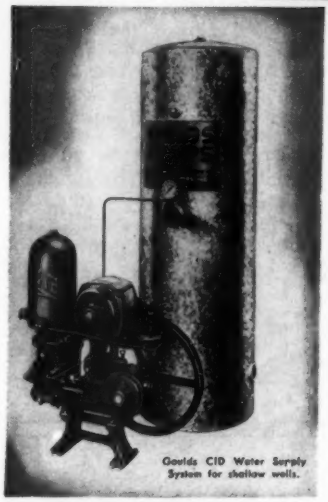
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June, 1937

Electricity on the Farm

Vol. 10, No. 6

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EDITORIAL

AFTER A MILD WINTER

It takes a mild winter like the past one to emphasize the advantages of electrical refrigeration.

Those farmers who were unable to put up ice, due to the lack of sufficient cold weather, are faced with the necessity of buying artificial ice this summer.

On the other hand, the farm equipped with electrical refrigeration both for the household and the dairy, will experience no interruption in routine; there will be no avoidable spoiling of food products; there will be no cause for sudden increase in bacterial count in milk.

This unfailing substitute for natural ice serves day in and day out in all kinds of weather. It eliminates the drudgery of putting up ice. In the cooling of milk it is particularly helpful in that no handling of heavy ice cakes is required.

With regard to costs, it requires 28½-pounds of ice to cool 100 pounds of milk from 95 to 45 degrees Fahrenheit; approximately one kilowatt hour of electricity is required to do the same job.

When all the inconvenience and labor incidential to putting up and handling natural ice are taken into account, as well as the possible food contamination through the use of natural ice, there can be but one choice, and that is dependable electrical refrigeration. Warm winter weather means nothing to it; uniform performance throughout the year can be expected; colder temperatures can be produced, and more quickly, too.

As a labor and trouble saver on the modern farm, electrical refrigeration has no peer.

FRED SHEPPERD.

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Ends "Cube-Struggle" and "Ice-Famine"! Instantly releases all ice-trays—*and all cubes from every tray,* with the new ALL-METAL QUICKUBE TRAY. Also freezes more *pounds* of ice—faster . . . stores 100% more ice-cubes ready for use! Most complete ICE SERVICE ever known.

2. GREATER STORAGE-ABILITY

New 9-Way Adjustable Interior . . . Full-Width Sliding Shelves, Cold-Storage Tray, new Super-Duty Hydrators that ALL adjust like magic to suit any size or shape of food! Most complete STORAGE SERVICE ever known.

3. GREATER PROTECT-ABILITY

Keeps Food Safer, Fresher, Longer! Safety-Zone Cold in food compartment—*proved* by new Food-Safety Indicator with Dial on Door, always in sight. Most complete PROTECTION SERVICE ever known.

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Five-Year Protection Plan on the sealed-in mechanical unit. Built and backed by General Motors, Frigidaire offers to farm homes the most complete DEPEND-ABILITY ever known—a service that is of vital importance to you.

5. GREATER SAVE-ABILITY

Only FRIGIDAIRE has the *Meter-Miser*

Cuts Current Cost to the Bone

You see its lower operating cost *proved* by an electric meter *before you buy!* The Meter-Miser does Super-Duty at amazing saving because it's the *simplest refrigerating mechanism ever built* . . . Only 3 moving parts, *including* the motor.

Only Frigidaire Has It!

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Its GREATER STORAGE-ABILITY, with the new 9-Way Adjustable Interior ends old-way "crowding." Its GREATER PROTECT-ABILITY keeps foods safer, fresher, longer—*proved* by the Food-Safety Indicator, with Dial on the Door. And year after year, the miracle Meter-Miser holds current cost down, runs trouble-free—for it's the simplest refrigerating unit ever built!

See your Frigidaire Dealer's PROOF-DEMONSTRATION of ALL 5 BASIC SERVICES. You'll agree it *proves* the new "Super-Duty" Frigidaire the most *serviceable* as well as the most beautiful refrigerator available to rural homes.

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...save money
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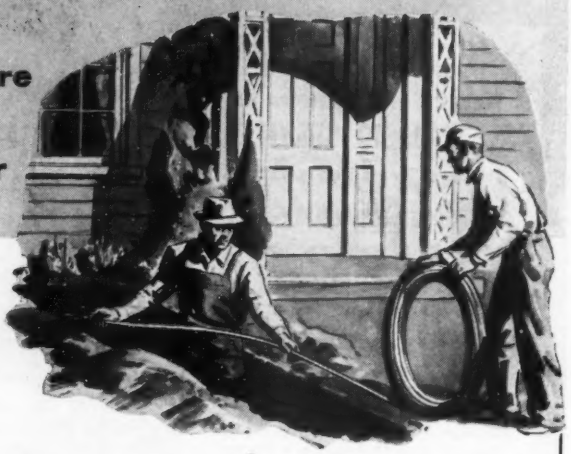

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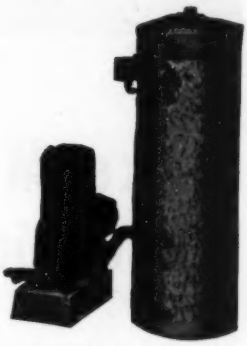

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Fig. 562 "WORM DRIVE." Hardened steel worm. Phosphor bronze worm gear. Ball bearings on crankshaft. All parts fully enclosed. Capacities: 105 to 1140 gals. per hr.

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CREAM SEPARATORS • MILKERS • MILK COOLERS

PROTECTING MILK PROFITS

By ALBERT V. KREWATCH

ELECTRIC refrigeration offers the protection and the source of added income sought by dairy farmers who are looking ahead. Experience has proven that it is a money saver and naturally a money maker for those who have it on their farms.

Take the case of Mr. Lester Osborn of Baltimore County, Maryland. He normally produces 4 to 5 ten gallon cans of milk each day. Heretofore, in spring and fall, he cooled his milk with spring water and stored it in the spring house about 200 feet from the dairy. During the summer, he had to buy ice. Even then the milk inspector "kicked" about inadequate facilities.

Seldom could Mr. Osborn get his milk below 55° when cooling with spring water. During the summer it was rarely under 60° when it was loaded on the truck in the morning. He has been just "getting by" for quite some time, but every summer he had his problems with rejected milk. He says he cannot afford to be without electric refrigeration any longer.

To answer questions about costs, I often refer to the J. T. Seibel farm, a typical dairy farm near Washington, D. C. Before electrification, Mr. Seibel used an average of $14.40 worth of ice a month during spring, summer and fall. Occasionally in summer, the ice bill would run over $20.00. Now electricity runs his milk coolers, and also his milking machines, his automatic water system, a 5 h. p. feed grinding outfit, the household refrigerator, electric range and other home appliances, as well as one electric brooder and poultry house lights in season, and a well-equipped shop. His electric bill is seldom over $25.00. All of this work is done for a little more than the cost of ice. Careful planning has brought profitable results.

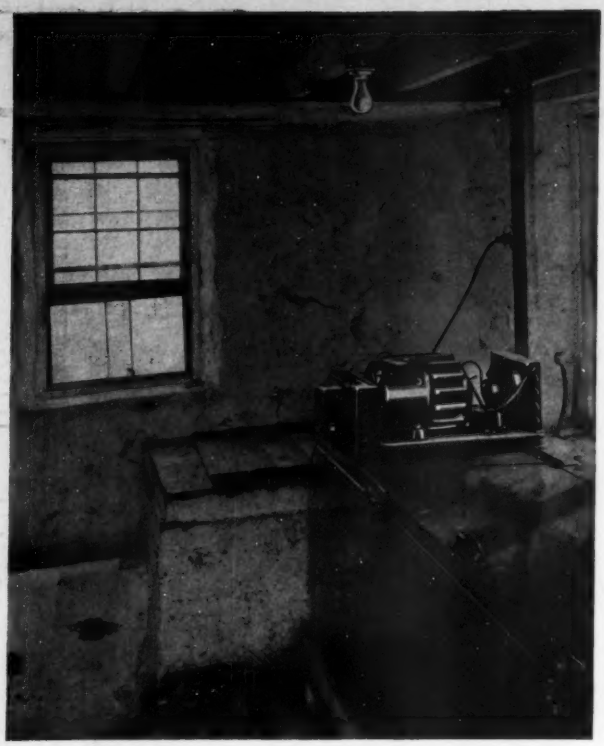
Back when Mr. Seibel used ice he could only cool his milk from 95° to 66° with water at 56° that was circulated through the surface cooler. The milk was then stored in iced water, but often during hot weather, the milk temperature in the morning would be 60° and sometimes higher. He cools his milk immediately to 45° by running 41° water from the storage tank through the lower half of the surface cooler. He stores the milk in water ranging from 39° to 43°, and the bacteria count is kept exceptionally low. Incidentally, he also gets an extra point on his "score" for having electric refrigeration.

While we were at Mr. Osborn's place, he asked, "What would be the difference in cost of current for the entire summer if I did, or did not, pre-cool my milk before putting it in the wet storage tank?" My best answer on comparative costs of pre-cooling before storage and cooling while in storage are the records on two nearby farms.

Mr. C. Ramsberg did not pre-cool his milk. His record for the summer of 1932 was:

Month	Gallons of Milk Stored	Kwhrs. Used	Kwhrs. per 100 Gallons
June	1440	145.5	10.10
July	1188	137.2	11.55
August	1163	127.3	10.95
September	1072	103.4	9.56
October	1150	74.4	6.47
		Average	9.8

Mr. H. Gamble of Frederick County, Mary-



Left: The old spring house of 15 years ago gets a new piece of equipment. Mr. James Simmons of Churchville, Maryland, is well pleased with his new 1/4 H.P. milk cooling and storage unit. In the background you can see the old box built over the spring.

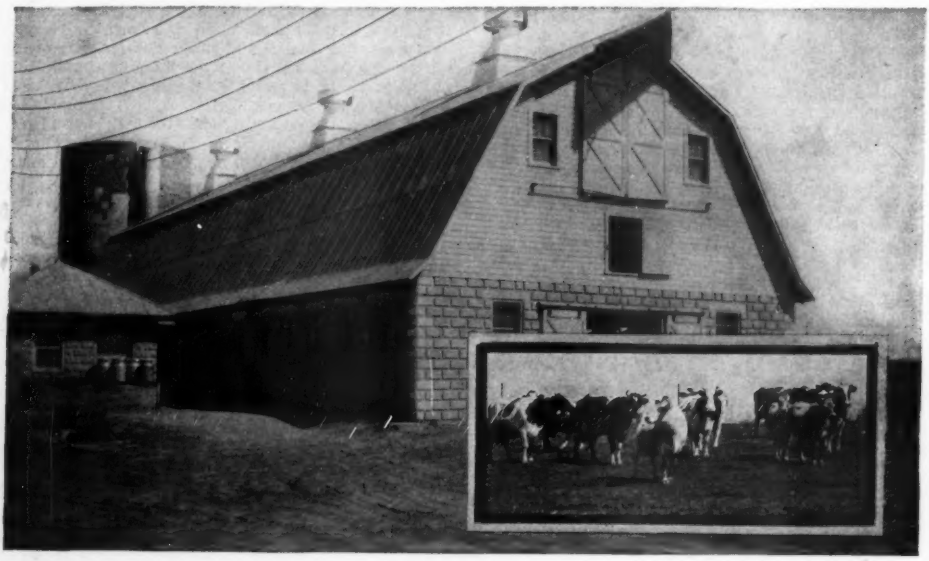
Below: A fine herd and a clean barn deserve the services made available by "high line" electricity. Mr. D. B. Dimond has all three: a fine herd, a clean barn, and electrictiy.

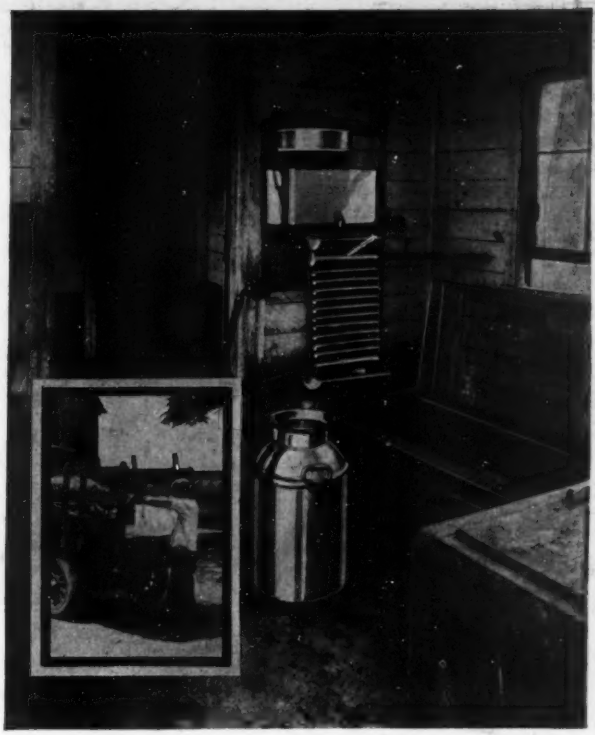
land, who has plenty of good cold water available, pre-cools his milk by running it over a surface cooler. He used about 30% less current than did Mr. C. Ramsberg.

It is not advisable to cool milk much below 40°, because too low a setting of the temperature control causes quite an increase in the cost of opera-

Figures from the Gamble Farm

Month	Gallons of Milk Stored	Kwhrs. Used	Kwhrs. per 100 gallons
June	2550	162.7	6.35
July	2945	187.8	6.38
August	2635	182.4	6.92
September	2400	151.3	6.30
October	2230	119.6	5.36
		Average	6.3





No handling of ice on the modern dairy farm; electricity puts low temperatures right where they are needed.

tion. Another current saver is good dry insulation to prevent heat leakage into the tank. Three inches of waterproofed cork is recommended by most authorities. Ventilating the compressor coils with outside air is also recommended because it will increase the operating efficiency. And do not forget the importance of having a tank big enough for the number of cans of milk to be cooled. The proper size allows for the storage of sufficient "cold" in the water and in the ice on the coils to cool the warm milk rapidly to the safe temperature of not more than 45°.

Another interesting feature of modern cooling tanks is automatic agitation for the purpose of breaking up that thin film of warm water which forms on the outside of the can. There are a number of types of tanks with agitating equipment. Some have a vibrating bottom to not only stir the water, but shake the milk as well in order to speed up cooling. Some tanks have circulating pumps. In other tanks air bubbles move up along side the cooling coils, while another type maintains a constant level of circulating water in the storage compartment, right up to the necks of the 10 gallon cans. All of these recently developed methods of stirring hasten the cooling of the milk in the cans. In still water quick cooling is not easily obtained

We have been talking about "wet storage" so far. Now, on the farm of Mr. H. J. Baker, Howard County, Maryland, where 200 gallons of milk a day are produced and bottled for the retail trade, a different method will be used. Mr. Baker says, "You know the handling of ice is not pleasant work and often takes time away from milking right at the rush period." (He has 50 cows to milk.) "If ice has to be hauled, it is much more expensive. Our greatest trouble in hot weather was insufficient ice and cold water for morning cooling. We couldn't always get the milk as cold as we wanted it before delivery."

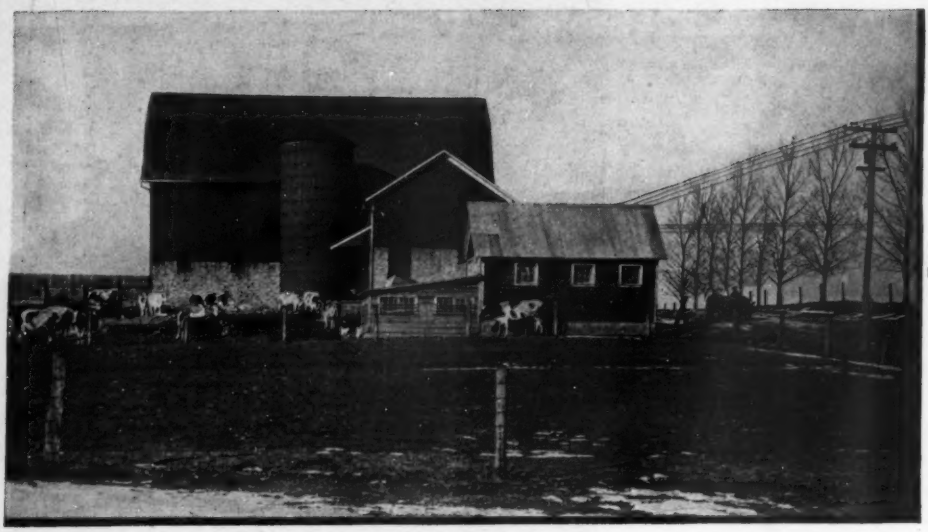
So Mr. Baker is building a dry storage room, or cabinet, 5 ft. x 10 ft. x 7 ft. to hold his cases of bottled milk. The cabinet will have the brine tank inside near the top. Brine instead of water will be used in the lower half of the surface cooler for quick cooling. Mr. Baker says that electricity for refrigeration, as well as for any other purposes, is absolutely necessary if he is to meet local competition and make a profit.

He is carefully considering the location, construction and insulation of his new box because he realizes that the first cost of the box is not the whole story. High operating costs may soon "use up" the first cost saving on a cheap, poorly-insulated cabinet. Heat that leaks into the box must be taken out by the refrigerating unit running more hours and naturally using more current and shortening its life.

There are two types of refrigerating machines. One uses water to cool the condenser coils while the other uses air. The water cooled refrigerating unit is the more efficient but its first cost is higher. It is usually preferred for large installations. The air cooled unit is simple in construction, easy to install, lower in cost, does not freeze in winter, and, therefore, is popular, especially in the smaller sizes.

Any experienced manufacturer, local dealer or your power company will be glad to help you decide on the best type and size of compressor, tank, and motor to cool efficiently the greatest amount of milk you are likely to produce, and by any method of cooling you desire to use.

There are many other interesting points in this problem of milk cooling. I am sure every one interested would enjoy a visit to the neighbor who has an electric refrigerating unit in his dairy.



BUTTER

FROM COW TO CUSTOMER

By E. R. MEACHAM

IN the depression year of 1930 Mr. George R. Schaefer, a Wisconsin farmer with only twenty-three cows, made and sold $2500 worth of butter.

Back in 1900 more than two-thirds of all our butter was churned on farms and less than one-third in creameries. But the growth of fluid milk markets and the competition of condensaries and cheese factories for the milk supply have reduced the farm butter output until in some of the leading dairy states it amounts to only 5% of the total.

Now the development of better equipment and the coming of electric power makes it practically as easy to produce really fine butter on the farm as in the largest creamery.

Throughout the whole process from the dairy barn to the dining room electricity can play a very important part. It not only lowers the cost by saving time and labor, but it also increases the profits by improving the quality—thereby raising the price, and by actually increasing the amount of butter. That is a big claim, more butter of higher quality bringing a better price, produced from the same cows and with less labor. Let's see how and why these results come about.

We might start with an automatic electric water system pumping fresh water at proper temperature right to the cow's drinking cups. For careful experiments show that cows will produce considerably more butter fat when they can drink as they please.

Or we might begin with the milking machine. It supports the claim of labor saving and the bigger the herd the greater the saving will be. While other power can be used for milking, there is none so clean, compact, and convenient as electricity.

Perhaps we ought to begin the consideration of farm butter making with separating the cream, because every step up to that point is the same in all fields of dairy production. Whether the cream is to be churned at home or sold, the centrifugal separator offers by far the best way to get it. Cream from the separator is usually richer and better flavored than that skimmed by other methods and the loss of butter fat in the skim milk is much lower. By running uniformly at just the right speed, a motor on the separator helps to save practically all of the butter fat and also the labor of cranking by hand. One kilowatt hour will ordinarily skim over 3,000 pounds of milk.

So far the choice of a market for the cream is open. It may be sent to the creamery or churned at home. Which offers the greatest advantages and why? Passing the work on to the creamery is certainly easiest and that is what most people do.

But the sale of cream is based on the butter

fat it contains and the price of butter fat at the creamery is only about the same as the prevailing market price of butter, though the cream will yield about 20% more pounds of butter than of butter fat. The difference, called the "Over-run," is made up of moisture and salt. In the creamery business the over-run pays for making, packaging, advertising, and marketing the butter.

On the other hand, farm butter making includes both the process of manufacture and the problem of marketing as well. The most direct and most profitable market is to consumers who appreciate fresh butter of high quality and will pay more than the ordinary market price to get it. By dealing with them directly the farm butter maker avoids the costs of hauling cream and shipping butter. The pay for this effort is the over run and a possible premium above the regular market.

Butter Making Deserves Attention

To the majority of dairymen some other outlet for their product may be more attractive than farm butter making. But there are many who should give it serious consideration. For example, farms selling whole milk at widely different base and surplus prices might profitably make butter from their surplus. At the other extreme of dairying where only a very few cows are kept to supply family needs, butter making also deserves attention.

After looking over the outlets available to him, Mr. Arthur Laabs of Colby, Wisconsin, decided to market the produce of his registered Guernsey herd through the churn. He is located in an area of condensaries and cheese factories and therefore had a market for whole milk. But he wanted to separate his cream so he could have the skim milk for his calves while it was fresh, sweet and even warm. Having had some creamery experience, he began to make Golden Guernsey Butter.

As time went on, his ability in the management of his herd, the operation of his little plant, and the marketing of his product brought him honor in his own county and among his own people. In 1929 the *Wisconsin Agriculturist and Farmer* selected him as Master Farmer of the state.

Right there at home in the little village of Colby, Mr. Laabs found customers for all the butter he could make from his own cream and some he purchased from neighboring Guernsey breeders. For the really delicious butter he produced, they were willing to pay a premium of several cents above the general market price.

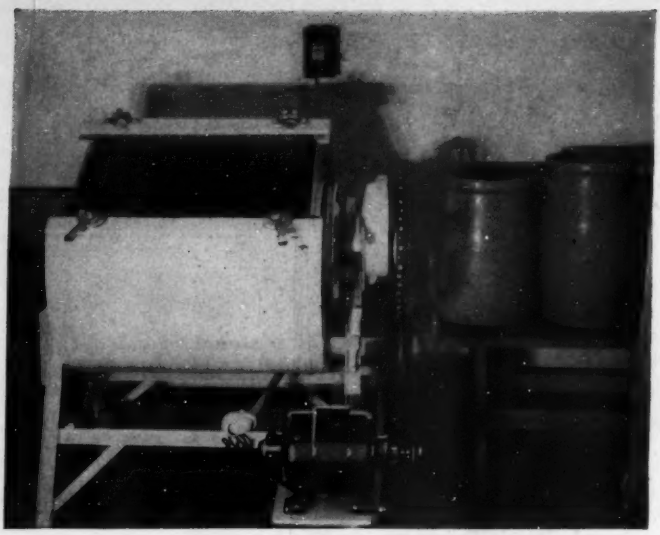
"It all amounted to quite a neat sum in a year," Mr. Laabs told me. "While we were at it, we bottled the buttermilk and sold it at 8c a quart. When we had skim milk to spare we made it into cook cheese and cottage cheese."

"Electric power helped, for our churn was too big to run by hand," he went on. "We usually churned about 60 lbs. of butter at a batch and that takes around 20 gallons of cream. But a ½ H.P. motor handled it to perfection."

According to one of the largest manufacturers of dairy equipment, success in butter making depends very largely upon correct temperatures all the way through. Cream cooled as soon as separated, kept cool till churning time, and then churned at the proper temperature will yield more butter, better flavored butter and better keeping butter than can be made from the same milk by hit or miss methods.

Proper Temperature for Churning

The churning temperature may vary from 52 degrees to 66 degrees, Fahrenheit, depending upon the season, the feed, and the cows. But for the best butter, the cream should always be cool enough so it will require at least 30 minutes churning—45 minutes may be better. This is where the motor driven churn beats the muscle-driven one. It is a tiresome task to churn steadily by hand for the better part of an hour. To shorten the job there is always the temptation to have the cream a little warmer so the butter will come in, say fifteen minutes. That saves labor



Left: The old stone jars hold cream for ripening, but the little black motor runs the big white churn.

Below: The square wooden roller works the butter in the churn.

but it never makes as good butter or as much of it, for more of the fat is left in the buttermilk. With a motor that never tires, it is easy to do the job right.

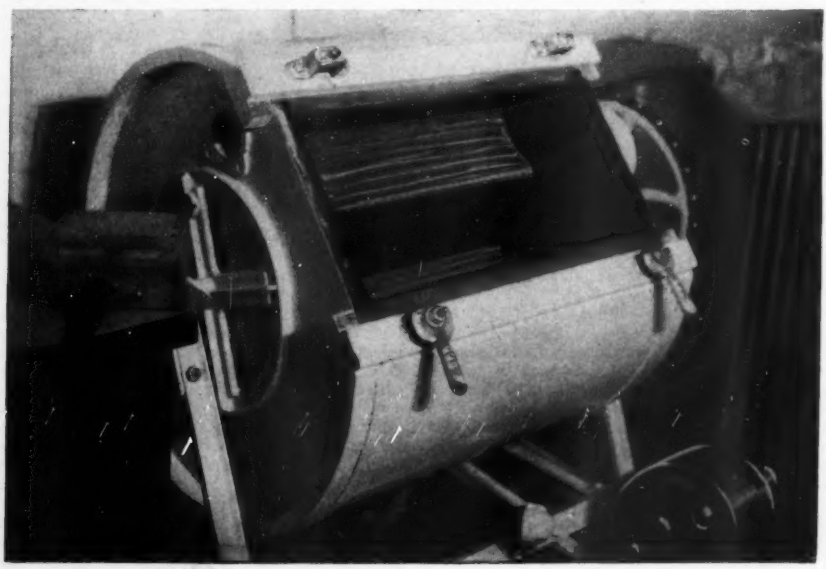
A ¼ H.P. motor will operate the ordinary barrel churn, box churns, or the old fashioned dash churns, while the regular creamery type cylinder churns with butter working rolls inside may take motors up to ½ H.P. In any case the power adds almost nothing to the cost of a pound of butter for 1 Kwhr. will turn out from 60 to 100 pounds of butter.

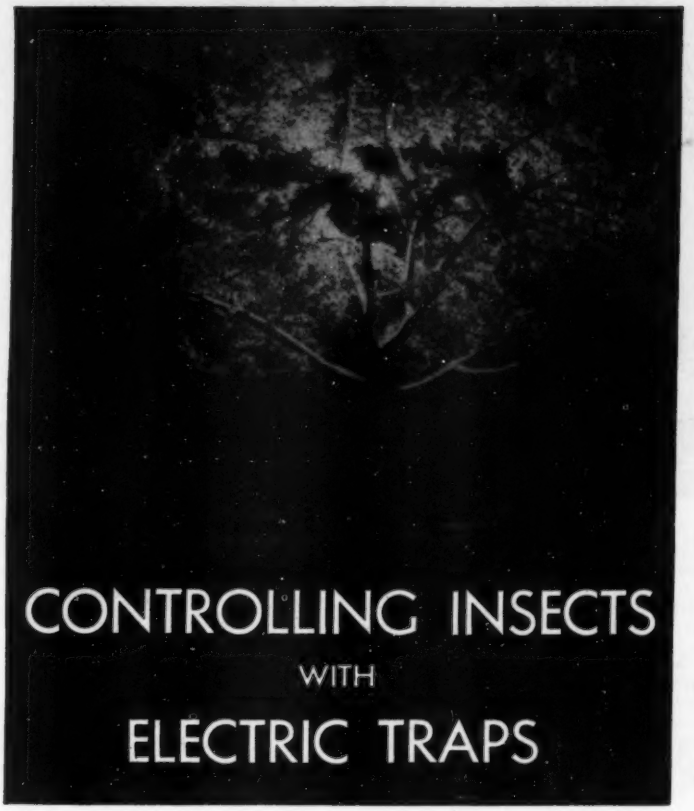
Butter making is a common practice on some of the fine estates surrounding Lake Geneva, Wiscousin. It was begun to supply the owners with fancy butter from their own pedigreed herds, and the surplus always finds a ready market.

"We used to do it with an old barrel churn," the herdsman of a fine string of Jerseys told me, "and I used to get so darn sick of it. Why, I've sat here and churned as long as three hours. But this is a lot easier. While that ½ H.P. motor is working, I can be doing something else.

"After the butter comes, I wash it two or three times right in the churn, using water about the same temperature as the butter milk," he went on to explain. "Then I'm ready to salt the butter and work it in. That's all done in the churn by power, too. I just put the churn in low gear to make this big, square roller turn and in ten minutes the whole job is done and I have 25 to 30 pounds of finished butter. As you'll notice from the butter mold here, we make it up in 1 pound prints."

With modern equipment and careful effort, farm butter-makers produce as good butter as the finest creamery. And they retain complete control of their business from cow to customer.





CONTROLLING INSECTS WITH ELECTRIC TRAPS

Fig. 1. A tree lighted at night.

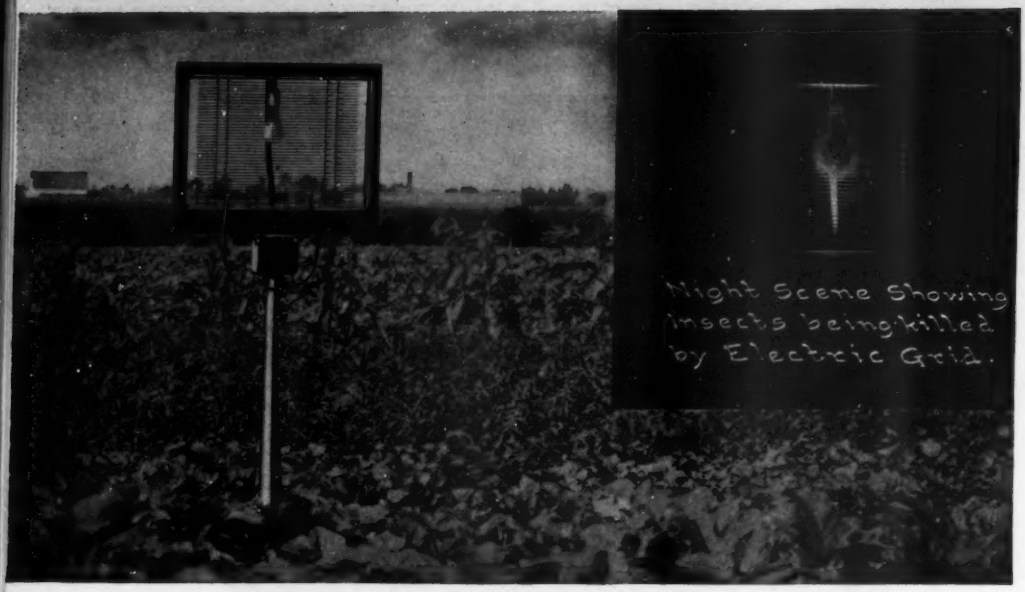
By DONALD L. COLLINS
N. Y. State Agricultural Experiment Station,
Geneva, N. Y.

THE question of controlling injurious insects by means of traps provided with suitable lures or "attrahents" has attracted attention for many years. Superficially the proposition is simple, but this apparent simplicity has proved misleading and numerous attempts have been made to apply the trapping principle in both practical and experimental work with very often none too encouraging results. Of recent years a renewed interest in the possibilities in such control measures has become evident, due chiefly to the continued failure of the existing methods of control of certain pests, and to the necessity, with a number of crops, of controlling insect pests without leaving objectionable or poisonous spray residues.

The New York State Agricultural Experiment Station has for the past few seasons been conducting a series of experiments with light traps in relation to codling moth population and injury, with a view to determining to what extent a beneficial effect may be expected from the use of such devices. The type of trap used and the mode of installation in the Station Rome Beauty orchard, together with a view of a lighted tree, are shown in the accompanying illustrations.

In the lighted portion of the Rome Beauty orchard at the Station where there is a trap of the type shown in Fig. 2 in every tree, there has been a reduction in the amount of codling moth injury which appears to be equivalent to that achieved through the use of one, or perhaps two, cover sprays. It is planned to continue these tests to determine whether this apparent benefit will continue.

With respect to the control of other insect pests, studies of the possibilities which may exist in the use of light traps are being made in all parts of the world. It is being found frequently that conclusions drawn from previous work were premature. Many of those experiments involved the use of tallow candles or kerosene lanterns; if the insects desired were not attracted light traps were considered failures. From such experiments generalizations were made which are now known to be entirely false in some instances, and true only under special conditions in others. It is now



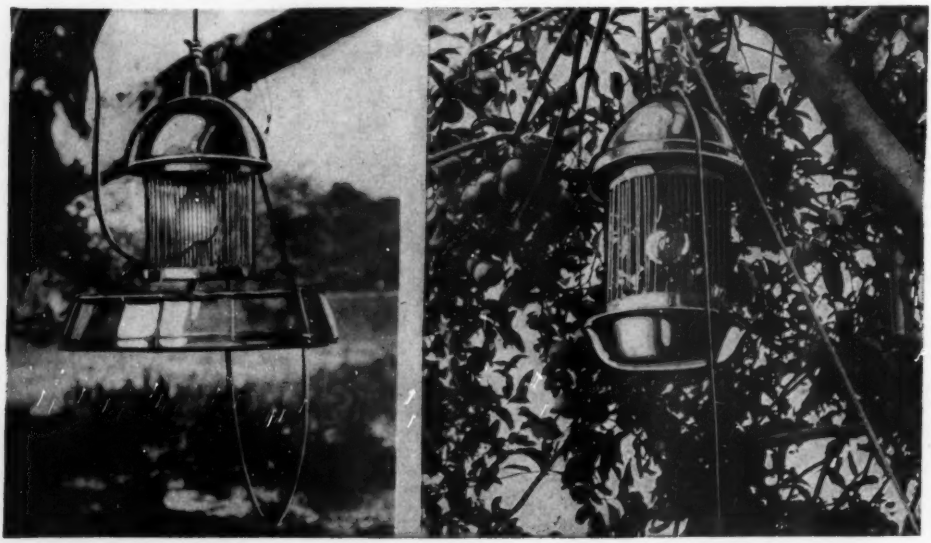
known that many insects are strongly attracted to blue or violet lights but are not sensitive to any great extent to the yellow of oil or tallow flames.

In recent experiments on the Pacific coast it was reported that light traps utilizing modern light sources gave a better control of the grape leaf hopper than insecticides. In the same region experiments with artichoke plume moths have led to the recommendation of light traps in their control. Another promising light trap experiment has been conducted against the cigarette beetle. With a suction-type light trap in an enclosed storage place a total of 61,095,600 beetles were captured in 64 traps, an average of as high as 954,619 beetles per trap in 4 days under good conditions.

(*Continued on page 30*)

Above: Type of electrified insect trap installed on Illinois State Experimental Farm. Light source, 100 watt frosted globe; size of panel 26 by 20 inches.

Below: Fig. 2 **(Left)** Light trap of the type used in the Rome Beauty orchard at the New York State Agricultural Experiment Station. Fig. 3. **(Right)** Light trap installed in an apple tree. (Boughs bearing fruit adjacent.)



There is running hot and cold water at this sink.

The Kitchen Sink

By GAIL MEREDITH

IF you are hunting for some way to make over your kitchen, there are dozens of people anxious to help you. The Home Management specialists from the university have ideas on the subject. Chances are that there is a kitchen planning architect employed by your power company. The manufacturers of stoves and sinks and refrigerators; the makers of linoleum and the builders of cabinets, all of them stand ready to offer you plans that will fit your needs.

Two years ago 65,000 of your neighbors wrote in to these various institutions that offer a kitchen planning service asking for help. Last year there were a quarter of a million of them clamoring for advice and suggestions for their kitchens.

That is the only kitchen planning, when you come right down to it, that will really help you, the plan that is based on your own kitchen, but it does not do any harm to study the ideals of kitchen planning, too. It gives you an idea what you are working toward—and why.

Last month we mulled over the question of the places for storing and preparing food. We set

(*Continued on page* 20)

A good start toward convenience.

The Bria

Upper left: Broiling bacon—If a bride should go on a sit down strike she could still get breakfast easily and pleasantly right at the table.

Upper center: Waffles—For breakfast, for dinner, for supper. All the world loves a—waffle.

Upper right: Orange Juice—This mixer is appearing in a new finish of chrome and white to fit the color scheme of the bride's new kitchen. It beats, and mixes, and

Bridal Path

dishes, too. It has more strength than a dozen brides.

Left: For Bride's toast, crisp and hot.

Right: Hot water in a hurry helps flurried cooks.

Lower left: Supper for two from this handy electric casserole.

Lower right: The roast is in. Here are the vegetables and the dessert, a cobbler, I should say, all ready to bake at the same time.

Left: Note the ventilated doors for the space under the sink. The cabinets offer excellent storage space.

Below: A model kitchen. The lady in the looking glass is standing in front of the sink. The side-opening dishwasher is at her right. Notice the ample storage space below the counter.

up the refrigerator and built cabinets along side and above it to hold flour and sugar, the mixer and the rolling pin, all of the things you use when you are getting food ready to cook or to serve.

The next center of interest is the kitchen sink.

Sinks are being viewed with great respect by the folks who are planning kitchens today. When putting in the sink was left entirely to the plumber, he was apt to tuck it off in some corner, anywhere the pipes would reach easily. That was his chief concern.

He would whistle happily when he finished the job and threw his tools back into his truck. I guess he'd have a chance to drive clear off the farm before the woman of the house discovered that she couldn't pile all the dirty dishes on that left hand drainboard, and if she did, she had no place to put them after they were washed. If she drained them on the sink, she'd have to walk across the kitchen to the table or cabinet with every dish as she wiped it.

We have begun to plan kitchens to fit the women who work in them rather than the workmen who put them together. Up at Cornell last year some curious specialist put a pedometer on the ankle of a woman who lives over in the northeast corner of the state, and measured the distance she walked just to get her dishpan and carry it back again to its hook.

Fifteen miles it was in every year. Fifteen miles. A pretty long walk to get a dishpan.

Cutting down the mileage is one of the chief aims in re-planning kitchens today.

Since all work meets at the sink, washing the vegetables to be cooked and the vegetables to be put into the refrigerator, washing up the dishes used in both places, it seems a good idea to put the sink between the stove and the refrigerator and as close to them as your work space and your cabinets will allow.

Before we go on, I wish you would look for a minute at the lower picture on page 17.

I remember when this house was built, a dozen

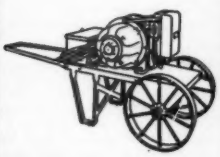
(*Continued on page 22*)

GET A "G-E"
YOUR BEST GUARANTEE

G-E radio sets bring news, crop reports, and entertainment. G-E cleaners remove dust and dirt and protect rugs

G-E home laundry equipment cuts laundrying time in half, cleans clothes thoroughly, and preserves their life

The G-E Kitchen saves many steps, simplifies food preparation and cooking. Shown here are G-E range and G-E refrigerator



G-E portable farm motors operate ensilage cutters, feed grinders, wood saws, huskers, shredders, etc.

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SEVENTY out of every hundred farm families who have installed electricity have, within two years after the installation, been unable to enjoy many much-desired additional uses of electricity because they had skimped on their wiring.

Avoid "skimped wiring" as you would a tubercular cow. It strangles your use of electric services, jumps up your costs, and demands expensive additions and alterations every few years.

A "roomy" wiring system with large enough wire, good materials, and plenty of outlets, is the very foundation that supports the full, profitable, enjoyable use of electricity.

For your own protection and economy, have a competent contractor install this kind of a wiring system. Demand "G-E Farm Wiring." It will last a lifetime and give you the best and lowest-cost operation of every electric device for use on the farm. You install it and forget it. Write for booklet today.

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Please send me your booklet, "The Farm Wiring Problem."

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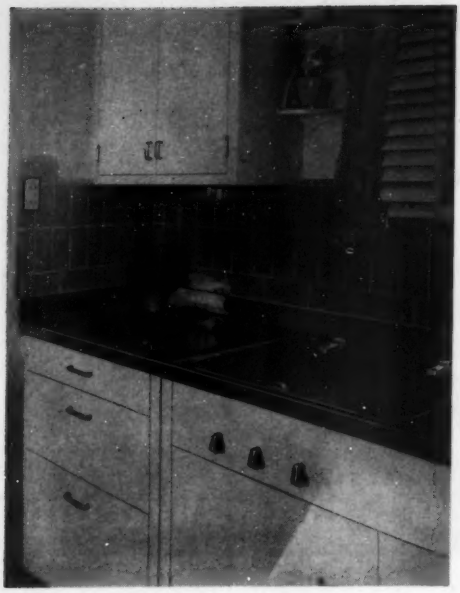

Here is a dishwasher elbowing the sink.

years ago. The stove is on the wall across from the cabinets and the refrigerator faces the sink. There is a good deal of floor to wash and wax and travel back and forth upon.

The sink, a beauty, as you can see, has a wall all to itself.

When Hester washed dishes, she stacked them, some on the counter and some on the drainboard. There is room in the sink to put a drain basket at the right of the dishpan, but there is no place to put them after they are wiped—no place within reach.

I do not know who is washing dishes in that kitchen now. Perhaps she has a continuous counter under the window connecting the counter of the cabinet with the drainboard. Perhaps it goes on from the right of the sink to meet the wall at that end. That would make dishwashing with hot soft water quicker and easier. Well, if you won't admit you *can* make washing dishes by hand easier, you will admit, surely, that building such a counter will take a good part of the foot work out of dishwashing.

It may be, since kitchen plans have dazzled our eyes from so many magazines for such a long time, that already Mr. Tabbert, a handy man with the hammer, has built a cabinet over the sink with shelves for the dishes and glasses, so a body can put them away without moving from the spot.

Or if he thought that would over hang the working space in the sink too much, narrow cabinets at the sides would leave head room. The light could be moved down and set under the cabinet to shine on the counter and sink.

That space under the sink can well be enclosed for a storage place, too.

How often do you have to go down cellar for potatoes?

Half of that space under the sink, if he enclosed it with a door with a grill of some kind to let the air through, would make a most convenient place to store a sack of potatoes and onions.

Whatever you do with most vegetables, you have to wash them first, so they should be stored near the sink. So should the sharp knife and the brush you use to prepare them. Under the sink should go the can for wastes thrown away in preparing the food or scraped from the plates afterwards.

You want a rack on the door or a space on a shelf for soap, soap powders, cleaners, and a dish mop. If the dishpan is under the sink, no one will have to walk fifteen miles after it, in a year or a life time.

With a dishwasher as part of your sink, you can put the dishpan on half time. You scrape the dishes, stack them in convenient racks, sprinkle them with washing powder, and shut down the cover. After that all you have to do is turn on the water and start the motor.

You can use much hotter water in the machine than your hands can stand, so the dishes get a better cleaning. After a hot rinse, lifting the cover and letting the air strike them, dries the dishes quickly. The glasses and the silver will look better for a little rubbing, but that is all.

While the machine is doing the day's dishes, you can wash up the pans where food is stuck or burned on.

Good planning sets aside a drawer for the silver close to the sink, a shallow drawer for dishtowels and dish cloths. Another for aprons. And within easy reach, a shelf or a deep drawer for sauce pans and cooking utensils.

Now, don't interrupt me. I'll bet you were going to say, since you, too, have been thinking this thing through, "but they are used on the range. Why not put them near that?"

If it is vegetables you are getting ready, and if you are going to put water on them, you start from the sink. And one of the new laws laid down for planning the storage of the things we use in the kitchen is "store at the point of first use."

It doesn't do any good to go around grumbling at your kitchen, but there is some point in being dissatisfied with it, if from that dissatisfaction can grow a plan for a handier, lovelier place to work.

Making More Room

One of the men spoke: "I dug this hole where I was told to and began to put the dirt back like I was supposed to. But all the dirt won't go back in. What'll I do?"

For a long while the supervisor pondered the problem. Then: "I have it. There's only one thing to do. You'll have to dig the hole deeper."

—Punch Bowl.

"You must feel pretty badly if your best friend has run off to Europe with your wife."

"Yes, I'll miss him."

A Sure-Fire System

"No, sir," said the barber as he lathered his customer's face. "I used to give credit, but nobody asks for it now."

"Oh," said the customer, surprised, "why is that?"

"Well, I got tired of keeping books, and so whenever a man asked for credit I used to put a little nick in his nose with the razor and keep tally that way. Nowadays they all seem to prefer paying on the nail."

The customer fidgeted in his chair, and then felt his pocket.

"I suppose," he said, "you have no objections to being paid in advance?"

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The wonderful new 1937 "surging" Surge Milker *replaces* four feet of hard-to-clean, hard-to-sterilize milk tubes with four *short* inches! It is the *one* milker instantly adjustable to each individual cow! *And now*—Surge is the *first* and *only* milker to bring you solid 18-8 Stainless Steel construction in *every* metal part touching milk—*guaranteeing* no retinning, no corrosion, lower bacteria count, greater strength, lifetime durability, perfect sanitation.

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—with patented features that put it in a class by itself—will cool milk quickly, easily and economically. HAVEN Milk Cooling Unit is available ready for use in your own concrete or steel tank. Also supplied with insulated steel cabinet, ready to go. 1 to 16 can capacity.

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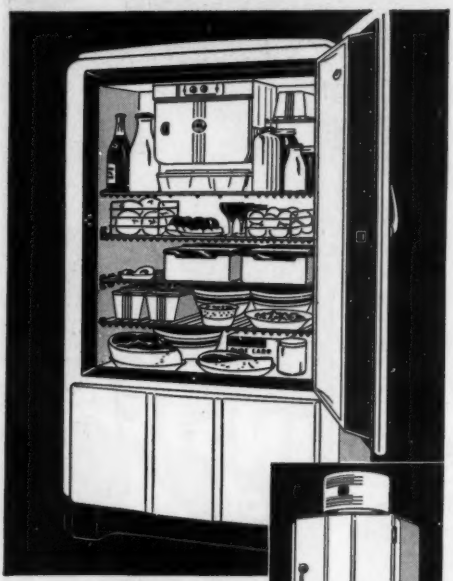

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GENERAL ELECTRIC

REFRIGERATORS

ELECTRICAL HOUSEKEEPING

Conducted by GAIL MEREDITH

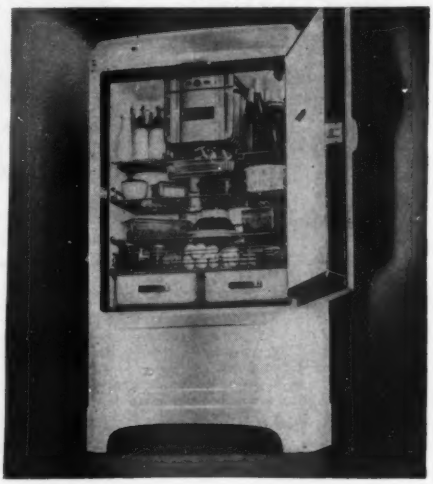
ON THE SHELF

EVEN good housekeepers sometimes neglect the inside of their refrigerators. I don't mean that they fail to keep them clean. I mean they never seem to learn to put things away in either orderly or convenient fashion.

We have spent considerable time in the last decade figuring out exactly where different foods should be placed. Meat, because it does spoil quickly, should be in the coldest spot, we have said. Milk comes next. Butter and eggs, then vegetables and fruit follow in that order.

The coldest spot, you probably remember, is in the path of the air as it leaves the chilling unit. Since cold air drops, this is directly beneath, unless there is a tray there. In that case the air is diverted to the side, dropping near the wall of the cabinet, picking up heat from the food as it passes, until it is warmed enough to rise again. When it hits the chilling unit, the heat is taken up and the cold air starts the circuit all over again.

Today we hear voices lifted from one laboratory or another where the study of equipment



Extra cold for roasts. The baby's formula has a cold place.

goes on, saying that the warmest place inside a good electric refrigerator is cold enough to keep meat or milk, so we might as well let convenience dictate the placing of our food. We can be sure it will be safe anywhere.

There is, however, one more reason for giving certain foods a definite place on the different

shelves. The air passing through the refrigerator does pick up moisture with the heat, and with the moisture it picks up odors. Then it carries the moisture, and the odors, to the surface of the chilling unit where they freeze on and stay until you defrost the refrigerator.

The cold air leaving the unit is odorless. That is the place for foods that take up odors easily. Those that have a decided odor of their own should be kept where the air will pass over them last on its way back to be freshened and chilled again.

Since the cooling is effected by the circulation of the cold air, you can see that you help it by keeping the dishes far enough apart to leave it a path. When you overload the shelves, you may shut off the air so it cannot readily cool parts of the box.

With the moisture being constantly frozen onto the chilling unit, the air throughout the cabinet is

Above: A roomy pan for keeping the vegetables crisp.

Below: The zipper bags.

dry. To prevent absorbing the moisture from the foods as well as to keep their odors to themselves, you need to cover most things if they are to be stored more than a few hours.

In many refrigerators large covered pans for vegetables and wire baskets for fruit and eggs fit snugly together across the bottom of the cabinet

They're all agreed on the MYERS

RUNNING WATER — YOUR FAMILY DESERVES IT

YOU can find many farm families right in your own county who have long enjoyed the use of a MYERS Water System. Ask the members of such a family what they think of the MYERS and you will invariably find them agreed that they could not have made a wiser purchase.

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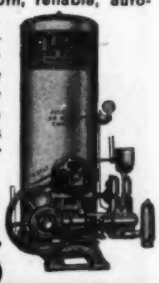

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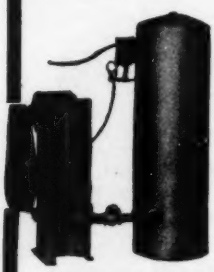

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to make the best use of the space. Sets of refrigerator dishes in enamel, or oven glass, and in clear or colored fancy glass, dishes that fit one on top of another, are on sale everywhere, in ten cent stores, in department stores, in hardware stores.

This last year has seen the advent of oiled silk zipper bags to keep food fresh and crisp. There are small square bags and large square bags. There are long narrow ones for celery and carrots. Round caps of the same material with elastic in the edge fit any bowl you have.

They are easy to use and easy to keep clean. They will fit in most anywhere, too, and show what is inside.

Some women cling to the habit of thrusting food into the refrigerator all wrapped up just as it came from the store, or the butchers, more

The pan at the left in this refrigerator is for vegetables, too. The narrow one in the middle is a wire rack for eggs, and the large one at the right is a rack for fruit.

likely. This is a bad habit because paper is a poor conductor of heat and hinders the chilling.

Meat is one of the exceptions to this rule that food should be covered.

The United States Department of Agriculture says that meat kept in a closed container or wrapped completely in paper spoils more quickly than it does if it is left uncovered so the air can circulate around it. Miss Cushman of Cornell gives this further advantage of leaving the cover off. She says that a protective covering is formed in the meat itself which makes it more tender and improves its flavor.

Vegetables should be trimmed and washed before they are put in the refrigerator. There is no need to refrigerate the tops of carrots and radishes, for instance. Some fruits can be washed, but berries keep better if they are washed just before you use them. Cantaloupes and pineapples

should be wrapped in waxed paper or put in one of those zipper bags because of their odor. Other fruits and berries need not be covered.

After you have mentally assigned certain foods to their permanent place at one end of the air current or the other, after you have bought new refrigerator dishes and set aside some screw top jars to hold some of your left-overs, plan to put the food away so the things you use for every meal are at the front of the shelf and foods you need less often well to the back.

The manufacturers of refrigerators are doing everything they can to make the storing of food easy. An inside lamp shows you the whole box at a glance. There are sliding shelves, shelves that come out, shelves that turn up, and shelves that can be hung in two or three different positions to give you the height you need to store your bulkiest or your flattest food.

There is no reason at all for making hard work of it.

• • •

June Contest

THERE were a dozen letters I'd like to print. Isn't Mrs. Ingraham's interesting?

This month we want to hear from you about washing and ironing. How do you do it? Where do you do it? And what, in your estimation, would make the job easier? "Doing the Laundry" for next time, then.

The winning letter gets five dollars. All of the letters become the property of the magazine, and the writers agree to their use, or to the use of quotations from them. Payment for such use will be made at regular space rates.

The letters should reach me by June 20. Address them to Gail Meredith, 1026 Seminole Highway, Madison, Wisconsin.

This Is the Way I Raise My Chickens

Dear Editor:

Evidently I have always liked chickens. When I was at toddling age my mother found me pathetically cuddling a little downy I had smothered to death with too much loving. Today that instinct is still paramount but in fifty years I have learned to handle with more care. Until recently chickens were small fry for men to fuss with and that end of the business was left to the women of the home if

Photo by permission of Rural Electrification Administration

MORE WATER COULD HAVE SAVED THIS FARM HOME

Burned to the ground, because of a lack of water—this ruined farm home pictured above shows the value of insurance which could have been provided by a reasonably sized, automatically controlled water system, with storage tank.

This is only one of the many types of farm service to which Century Repulsion Start Induction Single Phase Motors have been applied for more than 30 years in all parts of rural America—doing all kinds of farm work and providing more comfort, safety and leisure for the farmer and his family.

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DELCO PUMPS

Earn their keep— and more

Running water adds to farm profit as well as comfort and conveniences. It saves time — and makes money!

● **A Delco automatic water supply keeps water always on tap . . . ready for every job. For watering stock — a few cents will pay for pumping water for twenty head of cattle. For protection against fire loss, for sanitation, there is no sounder investment. These advantages quickly count up to actual big cash savings! And that means more profit! There are Delco Pumps for every requirement — up to hundreds of gallons capacity per hour. Give a Delco Pump a chance to show you how it can earn its keep—and more! Mail the coupon below for full details!**

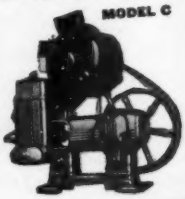
EASY FINANCE TERMS

Ask your Delco Pump dealer to explain how easy it is to buy and pay for a new watering system.

A NEW LOW COST DELCO PUMP

MODEL C

Capacity 225 gallons per hour. Automatic. Operating pressure 20-40 lbs. For lake, well or cistern where lift does not exceed 22 ft. Available in either 32 volt or 110 volt.



(110 volt A. C.) $46.50

Also Delco deep well pumps available for depths exceeding 22 ft.

UNITED MOTORS SERVICE Inc. EF-4
General Motors Building, Detroit, Michigan
My well is_____feet deep. Please send complete information on Delco Pumps.
Name_____
Address_____
Town_____State_____

PRODUCT OF GENERAL MOTORS

they wanted any eggs. Very few farm men that I know ever were willing to buy an egg but they do like cakes and eggs, too. My experience and my mothers's before me has been that hens did pay when we tended to them and the profits were very handy "to borrow from." My efforts in this line have been because I actually love to work with hens and then—too —a few pennies now and then make me feel more independent. If you have not a love for poultry—no matter how much you love the pennies—leave poultry alone and try something you do like.

I have hatched under hens—bought from hatcheries—now I am using my own stock and running my own small incubator for I feel my flock has now reached uniformity in size, color, vitality, lack of broodiness, and laying qualities to the extent that new blood might upset this well balanced program. It is only a small farm flock so care must be taken to prevent inbreeding. The flock as a whole has been rigidly culled for years. Loss from disease is very small. I am at a great advantage in this in picking my breeding stock so my chicks have an inheritable good start. My equipment is not expensive, in fact I have been obliged to use—well—New England thrift. When the chicks are thoroughly dry they are placed in a small brooder room and confined to a limited space till they are about ten days old when slides at the bottom of this room are lifted and they are given free access to the whole of the fifteen foot square room. The brooder consists of a 40″ metal top from a hot air furnace this has been covered with asbestos to conserve the heat—and the heating element is simply an electric bulb or bulbs as the weather demands —no fancy fixtures. The metal top is hung on a rope and pulley from the ceiling.

With this equipment I have raised 98% for the past five years, and the cost of electricity is low for the brooder confined to this six foot square tight room, except for the opening around the bottom, is very easily heated and maintained. There is a thermostatic control for this arrangement and I am in hopes to obtain one this season and try it out. My feed is a broiler ration put out by one of the best grain companies and I insist on absolutely no change during the growing period. Shifting from one brand to another and another is not conductive to good growth. The feed hoppers are constructed from crate slats in various sizes as growth demands. They are easy to handle, easy to construct, easy to keep clean and no money outlay. Yes, I build them myself for I can drive a nail as well as I can saw and plane—and woe to anyone who takes my tools. The brooder house and even the big henhouse holding 300 birds proves a woman can be as good a carpenter as a cook and I am not ashamed of results in either line. No, I am not very big and—yes—I have brought up nine. To go back to chicks, the water is kept very fresh and warmed. A small electric-submerged-

heater has been a great help in maintaining warm water. For bedding I prefer shavings though I have tried many kinds but chicks are less apt to pick and eat planer shavings.

Cleanliness must be maintained. I am not in the habit of using tonics or medicines of any kind but I do keep on hand a supply of potassium permanganate powder and in case a sign of intestinal trouble develops a tiny pinch of this is put in the drinking water—just enough to slightly color the water purple. Here I would like to stress the importance of a continuous light for growing chicks—it promotes more rapid growth and prevents crowding. A small red light after the brooder light is discontinued more than pays for the power it consumes for the same reasons as previous. My chicks stay on the floor till they are three months old. The cockerels are segregated as soon as discernible. If the broiler prices are attractive these are disposed of and help out materially on the grain bill—if the price is too low these little urchin misfits are canned for family use. I use tin cans and a pressure cooker for this work. At this period of growth —when the sexes are segregated—the pullets are put on growing ration completely and are kept on this until they begin to show signs of maturity or in my breed of N.Hs. until nearly five months old. My main object is to produce a well developed, well fleshed bird and not to develop them too early. By following this method I mature my birds to bring them into laying at about five and a half months. I expect them to have size and vitality to enable them to lay a large egg and to maintain that ability through the laying period. If they are consistently fed to maintain body weight they will not go into a molt early. Experience over a long period proves this.

My chicks are hatching today. My brooder room is ready, cleaned and disinfected, the hover in place and room temperature at nearly 100° now. Tomorrow the little fellows will be introduced to their new home to begin a life of usefulness. There is work ahead for me for I intend to take the full care—except for the cleaning for I can't do that any more for I have been classed as an invalid for nearly two years but I may fool them all yet.

Yours chickenhearted,

FAITH M. P. INGRAHAM,
(Mrs. I. P. Ingraham)
Riverside Farm, R. No. 4
Windsor, Vt.

The Best Salesman

Young Man (walking into cigar store): "I'd like to be a salesman for you. I'm regarded as the best salesman in the city."

"All right," replied the druggist. "Take a dozen boxes of these cigars out and sell them."

The young salesman tried hard to make a sale, but nobody wanted the cigars. Returning to the druggist he apologized by saying: "I'm the second best salesman. The man who sold you these cigars was the best."

ESCO NI-AG-RA *the only* MILK COOLER

THAT AUTOMATICALLY COVERS THE DANGER AREA!

Whether only one can, half capacity, or both milkings are in place

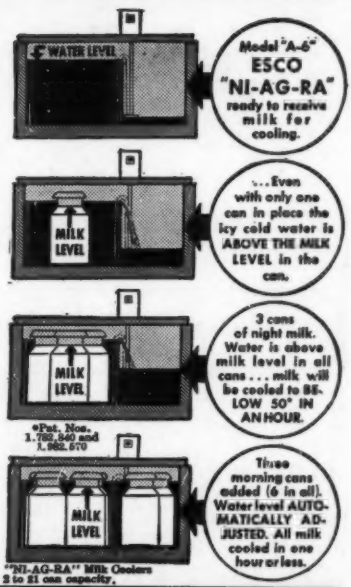
The top layers of milk and cream are the danger area of high bacteria concentration and growth. The milk at the top, as well as the lower part of the can, must be properly cooled to below 50 degrees and kept cold—to keep bacteria counts down.

LOOK AT THESE PICTURES

See how the ESCO "NI-AG-RA" always keeps icy cold water up on the neck of every can—so that all the milk to the very top is properly cooled.

The EXCLUSIVE PATENTED NECK-HIGH WATER LEVELER does this automatically—no valves to turn—no dummy cans—works just like a waterfall.

The ESCO "NI-AR-RA" gives you Faster, Better Cooling —at lower cost.


WATER LEVEL
Model "A-6" ESCO "NI-AG-RA" ready to receive milk for cooling.
MILK LEVEL
...Even with only one can in place the icy cold water is ABOVE THE MILK LEVEL in the can.
MILK LEVEL
3 cans of night milk. Water is above milk level in all cans . . . milk will be cooled to 85. LOW 50° IN AN HOUR.
*Pat. Nos. 1,782,540 and 1,982,670
MILK LEVEL
Three morning cans added (6 in all). Water level AUTOMATICALLY ADJUSTED. All milk cooled in one hour or less.
"NI-AG-RA" Milk Coolers 2 to 21 can capacity.

Descriptive literature gladly sent upon request. Write or send postal today!

ESCO CABINET CO. 639 E. Biddle St. West Chester, Pa.

DOES SHE NEED THE EXERCISE?

We like to think of the things that Uniflow Water Pumps do for you for as little as 45c in electricity monthly. They convert hidden water into greater farm income — less drudgery — more home conveniences— City folks pay more for only part of these services. *Guaranteed Uniflow Shallow Well Pumps from* $48.00 *up, terms arranged, tell us your problem.*

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Cellar Drainers
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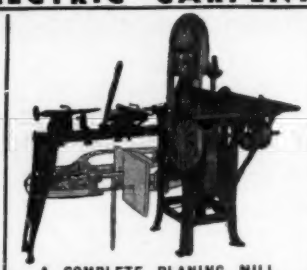

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BLIZZARD OPERATES EASILY, ECONOMICALLY, EFFICIENTLY

The Blizzard Ensilage Cutter and Hay Chopper operates with ease and amazing satisfaction with electric power. At Michigan State College 4 silos were filled with a total of 188 tons of ensilage at a total power cost of $5.34 using only a 5 h.p. motor.

WITH 5 H.P. ELECTRIC MOTOR!

Many farmers have found that the Blizzard and electric power make an ideal, profitable combination. Get free catalog at your dealer's or write us direct.

BLIZZARD MFG. COMPANY
BOX E, CANTON, OHIO

Controlling Insects

(*Continued from page* 18)

One important difference between trapping at lights and insecticide control measures is that in the former method only the adult insects, which often are not in themselves injurious, are destroyed, whereas in the latter method frequently only the larvae or immature stages are affected. Theoretically, the destruction of adult insects, codling moths for example, would be an ideal method of control if sufficient numbers of them could be killed before reproduction. Unfortunately this is difficult to obtain. The difficulty lies largely in a second and more fundamental difference between the control methods, namely, that while the use of insecticides involves an interference with vital processes of the insects, processes such as respiration and digestion, which are necessary for the life of the organism, the use of light traps involves only a certain type of physical and physiological response which requires a more or less definite aggregation of favorable conditions for its manifestation.

The tendency of an organism to respond in a certain way to a stimulus is known as a *tropism.* Insects which respond to the stimulus of light by flying toward the light source exhibit what is called positive *phototropism.* All insects which fly at dusk or at night do not possess this tendency to the same extent, and even such insects as the codling moth, which might be considered to be strongly attracted to lights, are not at all times equally responsive. Strong winds, excessive cold, actual physical disability, age, and physiological peculiarities of the insect may all, either together or separately, act to prevent the flight of an insect to a lure which under other circumstances might attract it. Knowledge of just how the tendency to fly to lights operates and of the specific reasons why it does not always operate is at present very imperfect. The acquisition of such knowledge is one of the aims of the research program now in progress at the Station.

Even with the present insufficiency of fundamental information, the results obtained both with the codling moth and with several other pests have been impressive and benefits have occurred which a few years ago were considered impossible.

He Made a Sale

As soon as the traveler entered the office, said the manager hurriedly, "I am sorry, but I cannot see you today."

"Well," replied the traveler, "it's lucky I called here. I represent a firm of spectacle makers!"

Second Thought

Bill Brawnley, the strong man of the village, met another villager in the local saloon. During their conversation Bill called the other a liar.

The villager naturally resented this remark. "Look here, Brawnley," he said, "I'll give you just five minutes to take that back."

Bill smiled. "Is that so?" he replied, expanding his chest impressively. "And suppose I don't take it back in five minutes?"

"Then," said the other, after a slight pause, "I'll extend the time."

"When is the only time a woman is justified in spitting in a man's face?"

"When his moustache is on fire."

—*Varieties.*

ON THE AIR

Conducted by JEROME J. HENRY

Finds Amateurs Excel Stars of Past

THE amateur actor of today excels the stock actor of yesterday, according to Haven MacQuarrie, director of the "Do You Want to Be An Actor" radio series originating in Hollywood radio studios.

MacQuarrie ought to know. He has spent 27 years on the stage, in stock and vaudeville. For seven years he was manager and agent of many screen stars. Now he coaches scores of aspiring young actors before a nation-wide radio audience.

"The amateur actor of today has an academic mind and is more capable of taking directions and using his intelligence in acting than was the old era actor in stock," explained MacQuarrie.

"Nearly everyone of the youngsters appearing on my programs, given a chance, would have made the grade in a stock company. And if stock were still here today, most of them would be happily playing parts on the stage and earning a living."

Perhaps Phil Baker hasn't quite that many pieces of sports equipment, but in the spirit of spring a short while ago, he quite overdid himself and became slightly confused.

MacQuarrie admits that judging a young actor's ability solely on the performance he turns in on the air during the Sunday evening programs would hardly be fair. He says, "Most of them have never been inside a radio studio, and even if they could read lines for the first time without a hitch, they would still be nervous before a microphone. Even seasoned troupers fail to read lines properly the first time they see a script."

It was eight years ago that MacQuarrie conceived the idea which is now the nucleus of his network series. He entered vaudeville with a sketch, "Do you want to be a movie star?" in which he invited members of the audience to come

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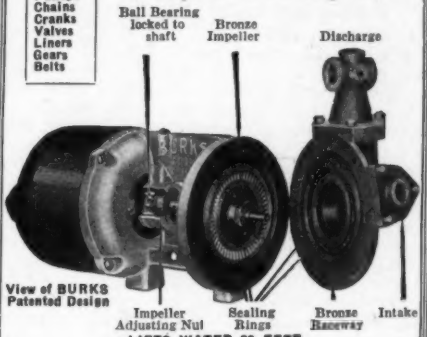
"Only One Moving Part"



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See the BURKS *Before You Buy*

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DE LAVAL SEPARATORS AND MILKERS

Wonderful Labor Savers and Money Makers

EVERY well equipped dairy should have a De Laval Separator and a De Laval Milker. There is nothing which will give greater profit and satisfaction.

De Laval Milkers are now used on thousands of farms to milk many of the world's best cows. They milk faster, better and cleaner.

For 60 years De Laval Separators have been the World's Standard. Sixteen styles and sizes, for every need and purse.

See your De Laval Dealer or write nearest office below.

The De Laval Separator Co.

New York.....165 Broadway
Chicago.....427 Randolph St.
San Francisco.....61 Beale St.

upon the stage and act the parts handed them.

He made his debut on a local Hollywood station a few months ago, and immediately captured the interest of the motion picture capital. MacQuarrie meets his cast when they are first presented to him on the stage. His role then becomes one of a sympathetic mentor as he attempts to secure a brief history of the applicant, then outlines the script he has prepared and analyzes the character to be done by the ambitious youth.

• • •

Fibber and Molly New Schedule

FIBBER McGEE and Molly, radio's famous pair of Irish comics, are well on the way toward completion of their second hundred radio programs. Just a little more than two years ago, Fibber and Molly started their adventures in a dilapidated old automobile with high hopes and low speed.

In their first broadcast they were arrested for obstructing traffic. But Fibber's gift of gab served him in good stead and he talked himself and his heckling spouse out of that one. Then and there he set the pace for all the fantastic situations he has since tangled with.

Later in their travels—over the airlanes— Fibber and Molly bought tickets in a real estate raffle. They won a house at 79 Wistful Vista, gave up their roving and settled down to become respected citizens. But there was plenty of gypsy left in the pair and they still fare forth in adventurous travels.

Bill Thompson, dialectician, who plays various roles including Horatio K. Boomer, Nick the Greek and Vodka, the Russian; and Hugh Studebaker as Silly Watson are members of the supporting cast. Musical background is furnished by the orchestra of Ted Weems.

• • •

Finds Radio a Pleasure

GLADYS SWARTHOUT, famed slim-waisted singer, says she really appreciates broadcasting after her arduous work making motion pictures. For her Wednesday night radio recitals the singer performs in the comfort of a great air-conditioned studio—away from the heat and glare of the film lights.

Miss Swarthout recalls that for her first film role she was costumed in the heavy silks and satins of early California. The locale of the picture was set 35 miles from Hollywood on a ranch in the middle of the desert.

"Driving the 35 miles to location was so hot my make-up melted in tiny rivers. They had to apply a new one when I reached the ranch house set where the rest of the company were waiting.

"The dressing room where they had to apply another make-up was so hot it meant fast work to prevent the second from melting, too. Finally I was ready, but as I left the dressing room, it was like walking into a molten steel mill.

"The heat made me forget everything else. When I was called to act I responded automatically. I just went through it and didn't realize until it was over that I had made my debut in a motion picture scene."

After that description you can understand why she considers radio a vacation, or near to it, anyway.

Qualifications

"Sorry, madam, but licenses are issued only when your form is filled out properly."

"Why, I like your nerve, sir. We can get married no matter what I look like."—Presidio.

No Cause for Injury

A bricklayer was working on a scaffold when suddenly a brick slipped from his hand and dropped on to the head of a workman, who was mixing mortar below.

The unfortunate man started dancing about and groaning. The bricklayer stared down, contempt in his eyes.

"Come, come!" he yelled at last. "It can't have hurt as much as that, man. Why, it wasn't on your head half a second!"

Free Information and Catalogs

Complete information about any equipment you are considering buying is yours for the asking.

But please give our advertisers first opportunity to answer your questions. They are particularly well equipped to serve you.

For any further information you need—use the handy coupon below—listing the applications on which you want further information.

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Readers' Service Dept., 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying:

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Gives running water under pressure from any depth well. Various size pumps and capacities—superior design—completely automatic—running in oil—quiet and efficient. Warranted by our half century pump manufacturing experience. Attractive low prices.

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Questions and Answers

Conducted by R. U. BLASINGAME

Motor Pull

Question: *I received the information which I recently asked for and I want to extend my thanks to you. I now have a question which I would appreciate your answering.*

I recently purchased a repulsion-induction A.C. motor, 110-220 volts, ½ horsepower, 1750 r.p.m. What is the pull on a prony brake in pounds on a lever one foot long at dead stall?

S. J.

Answer: The amount of twist or torque which a repulsion induction motor operated under rated voltage will develop, will vary from 225 to 300 per cent of the full load torque, depending upon the motor. Two hundred and twenty-five per cent of the full load torque developed by your motor is equivalent to a pull of 3.37 pounds on a prony break arm one foot long.

Telephone Signalling System

Question: *We have read with interest your column in* ELECTRICITY ON THE FARM *for some time. I am wondering if you can give us some advice on a problem here. We have a residence some 600 feet from the barns and office. We have a private telephone line, the telephone being in the house, and an extension in the barn. The phones are of the modern type, not the old style hand cranking type. When the telephone rings our custom has been for whoever is in the office to answer the call. Occasionally the person calling wants to talk to someone at the house. What we would like to do is to install some sort of a bell call system here so that we can operate the system from either end of our telephone line, with or without independent bells from the telephone bells, to ring the house from the office, or vice versa.*

Is there any such system that we can purchase ourselves? Should we try to get our telephone company to furnish one, or could we make one up ourselves? If so, what would be required? Any information you may be able to supply will be gratefully appreciated. P. W. J.

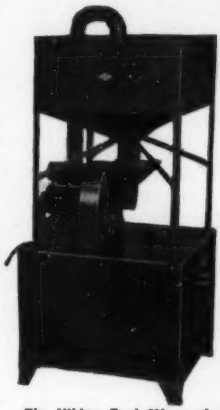
Answer: First, you should consult your telecompany to determine whether or not they can provide you with a call system to connect your house and office. If you then find it advisable to install your own, ordinary door bells may be used. A simple way to wire them is to run two wires from your house to the office, connecting their ends to a bell at each location. Then to each bell connect in series with the terminal a single contact push button and dry cells, or preferably, a bell ringing transformer to be operated by your lighting circuit. By running these wires between the buildings and using double contact push buttons, only one battery or transformer need be used. These are connected in the same manner as 3-way switches are in the house wiring. An electric wiring contractor can acquaint you with the details.

You should gain the telephone company's permission before you attach wires to any of their poles. Also, lightning arresters should be installed at both ends of the circuit.

Every Farmer His Own Feed Room Operator When He Owns

VIKING

Feed Room Equipment



Operating from fractional horse power motors any farmer can save . . . time . . . labor . . . money with—Viking Hammer Mill — Viking Corn Sheller — Viking Feed Mixer.

With a Viking Hammer Mill you can grind your own feed, at low cost, when and as you want it. Using less than one kilowatt hour per hour, the mill can be plugged into any convenient 110-volt outlet and will grind up to 700 pounds of feed per hour while you go on with other work.

Corn can be dumped into the hopper of the corn sheller and your Viking will sort the ears and feed them automatically. It shells large ears and nubbins equally well and a vibrating screen and blower cleans it thoroughly. Has all-steel electrically welded frame and is equipped with a seed corn tipper.

The Viking Feed Mixer mixes all grains, seed, mashes and concentrates, about one ton of feed per hour, and does an excellent job on inoculation. Has patented kneading action that prevents oily mixtures from working into balls or lumps.

Write for complete information and literature.

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Jackson, Michigan, U. S. A.

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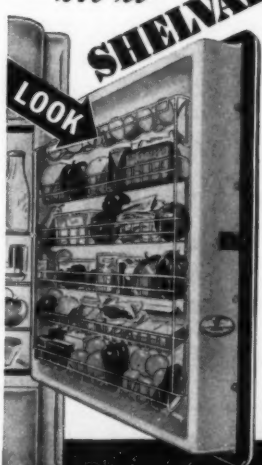

MORE BEAUTY
ECONOMY
CONVENIENCE
USABLE SPACE
ACCESSIBILITY

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CROSLEY

ELECTRIC REFRIGERATORS

What's New

Reviewed by T. E. HIENTON

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request. Address your requests to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

Electric Arc Welder

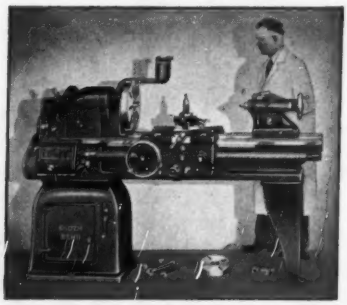
Welding broken parts of farm machinery, truck, tractor or automobile is a frequent occurrence on every farm. Some farmers have eliminated trips to town by installing welding equipment as a part of their farm shop equipment. Such equipment is used not only for repairing their own tools but also to do occasional jobs for neighbors at a profit to themselves.

The announcement of a new arc welder by a midwestern manufacturer was recently made. This welder works on a 6-volt storage battery or a 110-volt lighting circuit. It uses 20 to 25 amperes of current at six volts. A converter for 110-volt, 60-cycle current is used where power is derived from that source.

Lathe

Keeping modern farming tools in good running order during the busy season often requires the fabrication or finishing of a metal part for some piece of machinery. The availability of a lathe on the farm facilitates such work and enables the farm operator to reduce time lost due to shutdowns to a minimum.

A new line of underneath belt motor drive lathes has been recently brought out by a well known



lathe manufacturer. In this line, motor and driving mechanism are located beneath the headstock and are fully enclosed. A V-belt transmits power from the motor to the countershaft and a flat belt from the countershaft up through the lathe bed to the headstock. This new series of lathes is produced in 9-inch, 11-inch, 13-inch, 15-inch and 16-inch swing in bed lengths from 3 to 12 feet.

Indicator Cartridge Fuses

The blowing of a fuse is no catastrophe but its replacement may be a problem to the farmer not accustomed to methods of detecting a blown fuse. The blowing of a cartridge fuse may mean a delay in the use of a motor or other equipment on the farm because detection of a blown fuse of this type is more difficult than that of the plug type.

A new line of indicator cartridge fuses has been developed by an eastern manufacturer. These fuses have a neon lamp permanently attached to them and, when a fuse blows, this lamp immediately indicates the fact. The lamp is encased within a

handle which serves as a fuse puller. The fuses are made in both ferrule and knife blade types and are all renewable. Both types are made for 250 or 600 volts, the ferrule type in 12 sizes from 3 to 60 amperes and the knife blade type in 17 sizes from 70 to 600 amperes.

Farm and Community Refrigeration

The Engineering Experiment Station of the University of Tennessee, at Knoxville, has just issued a 64-page bulletin under the authorship of Prof. E. L. Carpenter and Mack Tucker, entitled "Farm and Community Refrigeration." The subjects covered are indicated by titles of chapters, which include: Trends of Farm and Community Refrigeration in America, Factors in Preservation of Food Products, Basic Principle of Refrigeration, Refrigeration Projects on Individual Farms and Community Refrigeration Projects.

The bulletin sells for 25c a copy and may be secured from the University.

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IDEAL HAY HOIST operates Hay Carrier with 2 to 5 H.P. motor or engine. Saves extra team and driver all through busy haying season. 10 DAYS' FREE TRIAL. Write for circular 207, UNIVERSAL HOIST & MFG. CO., CEDAR FALLS, IOWA.

SAFE, SANITARY ELECTRIC LAMP KILLS INSECTS AUTOMATICALLY without bait or cost where light is needed. Amazing results in garden, farm, lawn, business house, home, etc. Lifetime service. Price $2.75 up. Literature free. SAUER BROS., MFRS., 14820-M Foothill Blvd., Oakland, Calif.

COBURN ELECTRIC MILK AND CREAMER COOLERS $19.50 complete. Satisfaction guaranteed. 30 days trial. Cools rapidly at little expense. Saves costly cooling equipment. No installation, wiring or piping cost. Agents wanted everywhere. Write for free folder. COBURN CO., B-311, Whitewater, Wis.

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RULES
For June Issue Contest

Ten cash prizes will be awarded. The first and grand prize will be $20.

In addition a cash prize of $2 will be awarded for the best title from each of these nine geographic divisions of the country — (1) New England, (2) Middle Atlantic, (3) South Atlantic, (4) East North Central, (5) East South Central, (6) West North Central, (7) West South Central, (8) Mountain, and (9) Pacific.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

Titles should be brief—the shorter the better.

All members of the farm family to whom this magazine was sent may submit titles, but each contestant may submit only one title.

Question "A" must be answered.

Entries must be sent to the Title Editor, ELECTRICITY ON THE FARM, 6 North Michigan Avenue, Chicago, Illinois, before July 1st.

Winning names and titles will be announced in the August issue.

Send your title on the coupon or make out a similar form on a plain sheet of paper or government postcard.

Awards for April Contest

First Prize — $20

"No foot in the pail—no tail in the face,
The electric milker has taken my place."

F. H. ENGELKE, R.F.D. 6, Marshfield, Wis.

Nine $2.00 Cash Prizes

"Bring out the pail—put on the cups,
Press the button and milk DeLuxe."
MRS. EDITH STRICKLAND,
Box 48, North Westchester, Conn.

"Even the bossy may look skeptical,
Her milker is swift, sanitary and electrical."
MRS. HENRY L. WINDHORST,
Route 4, Box 483, Indianapolis, Ind.

"Clean milk, work done on time,
That keen eye says 'Electricity's fine.'"
MRS. CLYDE L. HULSIZER, R.F.D. 1, Altoona, Iowa.

"Current quickens the stream."
JAMES A. ROWSE, Bedford, Mass.

"Contented cows we've always had.
Now the 'lectric milker means contented dad."
MRS. JOHN DETMERS, R.F.D. 2, Ionia, Mich.

"No chance for germs to enter pail
When it's the switch of current instead of tail."
R. C. VIRKLER, Box 54, Baldwinsville, N. Y.

"From cow to can without a hitch.
All you do is turn the switch."
MRS. J. K. HENDRIX, Route 8, Spokane, Wash.

"The milky way is electric today."
MRS. BERT CRAIG, Okanogan, Wash.

"No cleaner milk from farm to city
Than that which flows by electricity."
MRS. STEVEN ROELOFS, R.R. 2, Hudsonville, Mich.

My title for the June Front Cover picture of ELECTRICITY ON THE FARM is.....

.....

.....

(a) What suggestions or recommendations have you for making this magazine more interesting and valuable to your family?

.....

.....

My name is..... R.F.D. .....

Post Office..... County..... State .....

6-37

Electric Cooking is COOL... CLEAN CONVENIENT

Bring Your Kitchen Up-to-Date with an ELECTRIC RANGE

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